ABSTRACT OF THE DISCLOSURE

What is disclosed is a decoding method for retrieving information bits encoded in a printed image comprising the steps of first receiving an input electronic image as a scanned version of the printed image. A region of interest in the image is then extracted and, for that region, an amount of K colorant present, denoted K_H; is obtained. Further, a color value is generated therefrom and the GCR used for encoding that region is determined using K_H and the obtained color value. Encoded information bits are retrieved therefrom based on the determined GCR. The estimated K_H is preferably evaluated conditional to a capacity signal K_L and a luminance signal L. From the obtained data, values of K_H , K_L, and L, are derived wherein K_H is estimated from a high resolution scan, and K_L and L are estimated from a down-scaled image, respectively. The capacity signal K_L and the luminance signal L are derived from the obtained color value. Further, the capacity signal, K_L is derived by first applying a suitable operator S to reduce the image from scanner resolution to the watermark resolution and then converting the obtained color values to CMY estimates such that K_L=min(C,M,Y) Alternatively, K-capacity is derived from the amount, K_L, y, comprises first converting the obtained color values to CMY estimates and applying a suitable operator S to reduce the image from scanner resolution to the watermark resolution such that $K_L = \min(S(C),S(M),S(Y))$; wherein L is described by a linear combination of scan signals RGB, such that $L = k_1S(R) + k_2S(G) + k_3S(B)$. The value of K_H is determined by first converting the obtained color values to CMY estimates. The estimates determine K-colorant amount at each pixel such that: K = min(C,M,Y). A suitable operator S is applied to reduce the image from scanner resolution to the watermark resolution.